BRAINWARE UNIVERSITY

Term End Examination 2024-2025

Programme – B.Sc.(MRIT)-2022/B.Sc.(MRIT)-2023

Course Name – Physic of Conventional Radiographic and Imaging Equipment

Course Code - BMRITC303

(Semester III)

Full Marks : 60 **Time : 2:30 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question) 1 x 15=15

1. *Choose the correct alternative from the following :*

(i) Recorded video signal of the TV camera is directly proportional to the

a) Intensity of light b) Electron beam
c) Target d) Amount of electrons

(ii) Identify which X –ray unit is capable of being carried from place to place?

a) Mobile X-ray b) Portable X-ray
c) Both of these d) None of these

(iii) Identify the Effective focus size of portable X-ray unit?

a) 1.0 mm b) 10.0mm
c) 3.00mm d) 4.00mm

(iv) Choose the correct option defining the rectifier's function in the x-ray tube.

a) To convert AC to DC b) To convert DC to AC
c) Both 1 & 2 d) None of these

(v) Select the correct option that describes the effect of increased mAs.

a) Exposure time decreases b) Exposure time will not change
c) Exposure time increases d) None of the these

(vi) Select the full form of CAD.

a) Computer Added Direction b) Computer Aided Direction
c) Computer Aided Detection d) Computer Added Detection

(vii) Choose the type of film used in mammography.

a) Double emulsion b) Without emulsion
c) Duplicating film d) Single emulsion

(viii) Recognize which material is commonly used for the anode target in diagnostic X-ray tubes?

a) Copper b) Lead
c) Aluminum d) Tungsten

(ix) Heat is applied to the X-ray tube's filament to create:

a) Magnetic fields
b) Electrons
c) Visible light
d) Radio waves

(x) Describe the main function of a skull table in radiography.

a) To provide a surface for the patient to lie on
b) To generate X-rays for imaging
c) To hold the patient's head steady during imaging
d) To shield the patient from radiation

(xi) Which among the following are used in Computed tomography (CT) Scan

a) Radio Waves
b) X-Rays
c) Infrared waves
d) Ultrasound

(xii) In a stationary anode tube, the target is imbedded in an anode made of: (identify the correct option)

a) Tungsten
b) Molybdenum
c) Copper
d) Rhenium

(xiii) Choose the material used as window in mammography

a) beryllium
b) borosilicate
c) both a &b
d) none of the these

(xiv) Who invented Tomography? Name

a) Radon
b) Josef capek
c) Curie
d) Johnson

(xv) Choose the correct full form of CT

a) Controlled tomography
b) Computerized tomography
c) Converted tomography
d) Comparison tomography

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Describe the X-ray anode. (3)
3. Describe various components of mobile X-ray unit. (3)
4. Explain Mammographic equipments. (3)
5. Explain Flat panel detactor? (3)
6. Write in details on types of mammographic exam? (3)

OR

Write What are the types of mammographic exam? (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. Illustrate the cross section high tension cable with diagram. (5)
8. Clearly describe the x-ray beam limiting apparatus. (5)
9. Explain what an X-ray grid is and how it functions in radiography. (5)
10. Explain how the X-ray beam generated by the X-ray tube is impacted by the anode angle (target angle). (5)
11. summarize on dexa scan (5)
12. What are some examples of the typical beam forms that a collimator can create? (5)

OR

Write short note on interlocking circuits (5)

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